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An Analysis of the Recycling Policy at the University of South Dakota

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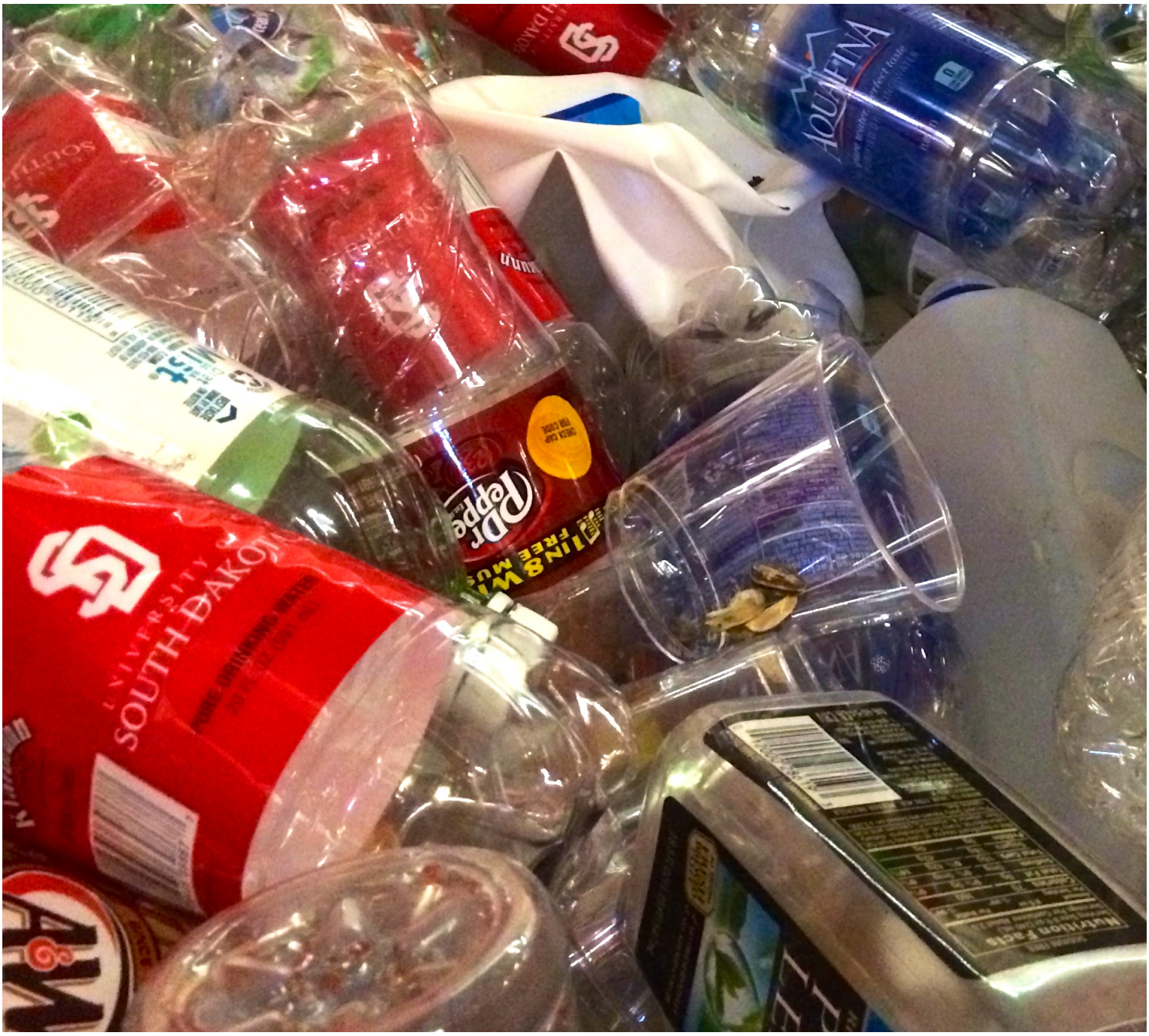

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Executive Summary

The University of South Dakota (USD) has achieved numerous milestones in recent years, most notably, record enrollment numbers in the fall of 2012. Furthermore, USD underwent a rebranding in the last decade while simultaneously transitioning to become a NCAA Division I school, greatly increasing the standing of the university regionally and nationally. Despite these accomplishments, USD lacks campus resources commensurate with universities of its size and stature. Most notably is a lack of commitment to sustainability through the implementation of environmentally mindful policies. Of the most common sustainable practices, USD is especially deficient in implementing a recycling strategy that affects the entire campus. With a student body exceeding 10,000 students and faculty and staff to support these students, the University of South Dakota has insufficient opportunities for solid waste materials generated on the campus to be recycled.

This policy analysis is a USD student's attempt to identify the current recycling policy being practiced by the university and introduce multiple policy alternatives. Because of time and resource constraints, these alternatives were not evaluated exhaustively. However, this analysis can serve as a foundational for continued work on modifying the current recycling policy to reflect the prominence of the institution. Multiple actions must be taken to adopt a more comprehensive recycling policy that promulgates a deeper commitment to sustainability by the University of South Dakota.

- Concentrating the authority to implement a comprehensive recycling policy is essential to ensuring continuity among recycling efforts across the entire campus.
- Financial and human resources must be allocated to provide sufficient support for increasing recycling opportunities.
- More actors need to be involved in creating a culture of sustainability that supports recycling efforts. Establishing a sustainable mindset among students, faculty and staff requires the full support by USD leadership and by the institution's administrators.

Increasing recycling opportunities while founding a campus culture of sustainability requires better coordination and cooperation by Facilities Management with Student Services. In addition, a successful increase of recycling opportunities on campus requires the allocation of additional resources provided by the administrative leadership at USD. Resulting policy recommendations include enabling facility management to oversee a comprehensive recycling strategy founded on two mutually exclusive alternatives (depending on an exhaustive cost-benefit evaluation): 1) increased recycling opportunities on campus with solid-waste recyclables taken to the Missouri Valley Recycling Center or 2) expanding the solid-waste contract to require Independence Waste or an alternative contracting service to provide and maintain single-stream receptacles on campus. In addition to the recommendation for facility management to implement one of these two policies, Student Services is also recommended to provide supportive programs that supplement the recycling program by increasing the sustainability mindset of campus patrons. Recommendations to achieve this include 1) Providing orientation and informational programs that inform students, faculty, staff and campus visitors of recycling and sustainable opportunities at USD and 2) reducing the volume of waste being generated at USD through the restriction of plastic containers on campus and an increased reliance on reusable containers.

The University of South Dakota has increased its regional and national reputation through the achievement of numerous milestones within the last decade. However, a failure to develop policies conducive to its institutional integrity undermines the successes of the past. Already being surpassed by other South Dakota Board of Regents institutions in implementing sustainability measures, a serious analysis of the current recycling policy is necessary to produce increased recycling opportunity at USD.

Historical Assessment: A Decade of Growth and Change

The University of South Dakota (USD) was founded in 1862 and serves as the state's oldest university. With a total enrollment of 10,235 students comprised of 7,633 undergraduate students and 2,602 graduate

students, USD is the state's second largest public university behind South Dakota State University (University of South Dakota, Quick Facts, n.d.).

In the last five years, USD has achieved several milestones, including transitioning to a NCAA Division I institution and a record enrollment number during the fall 2012 term of 10,284 students (Headcount Enrollment Trend as Fall 1997 as 100%, n.d.).

From a facilities perspective, USD has also experienced growth with the new construction of a 195,708 square-foot suite-style apartment complex (Coyote Village), new construction of a 61,000 square-foot Wellness Center, new construction of a 73,000 square-foot facility to house the Beacom School of Business, a $37 million project (one of the largest in state history) to construct the 156,000 square-foot Andrew E. Lee Memorial Medicine and Science Building, new construction of a 76,000 square-foot student center at the cost of $22.8 million and expanded in 2014 to add 30,000 square feet, an $8.2 million renovation to Bailey and Kathy Aalfs Auditorium (formerly Robert L. Slagle Hall Auditorium and major renovations to multiple science laboratories totaling over $15 million (University of South Dakota: Our Campus, n.d.). The preceding updates have all been completed within the last decade, positioning USD as a premiere academic institution for not only the state but also at a regional and national level.

In addition to the changes occurring on campus, change has also occurred within the way USD is being marketed to the public. Relying on a rebranding strategy to attract more students, USD sought the counsel of Lawrence and Schiller in 2009 to grow the student population through a new flagship brand identity (USD: Higher Education Case Study, 2013). In addition to a new logo, USD sought to embark on a new chapter through increased traditional advertising, media coverage, social media advertising and an overall increased online marketing presence. The combined results have enabled USD to emerge as an increasingly preferred institution of higher learning among high school graduates and non-traditional students.

Despite recent efforts to make the University more reputable, USD has overlooked opportunities to improve upon its environmental impact. In the fall of 2013, USD marked a new era in its sustainability efforts by creating a new Bachelor of Arts degree in Sustainability, the first in the state. Notwithstanding this

development, little else has been done on the campus to promote a sustainable culture for students, faculty and staff. Of the numerous environmental behaviors being practiced by universities across the nation and within the South Dakota, USD is especially lacking in the implementation of a recycling program. Opportunities for commonly recycled waste (paper, plastics, cardboard and other standard waste items) are available sporadically and intermittently across campus. Rather than removing recyclable materials from the solid waste stream, the overwhelming majority of solid waste is being disposed of in landfills. The ultimate result is a missed opportunity for USD to reduce the volume of solid waste that is collected by redirecting recyclable materials to a recycling center.

Defining the Problem: Insufficient Opportunity

The University of South Dakota is under-recycling an unreasonably high volume of solid waste being generated on campus. The current recycling practices at USD consist of uncoordinated efforts undertaken by both the Facilities Management Department and the Student Services Department with weak ties to the Missouri Valley Recycling Center. The attempts that have been made to recycle have received widespread support by the departments involved as well as positive feedback by the student body. Despite this support, there exists a lack of infrastructure and strategy to ensure all materials deposited in recycling canisters are indeed being recycled (Ellenbecker, 2014). Further, the same lack of infrastructure and strategy has also inhibited collection capabilities on campus, resulting in sub-optimal levels of recycling from occurring (under-recycling).

As the University of South Dakota continues to move toward its vision of being “the best small, public flagship university in the nation built upon a liberal arts foundation,” action is required to address the current problem of under-recycling on campus (University of South Dakota: Our Mission, Vision, Values. (n.d.). To address this problem, USD must act to increase the amount of solid waste that is being recycled on campus.

Stakeholder Analysis

In analyzing the existing policy and developing alternatives requires a consideration for interested parties, or stakeholders. The stakeholders involved with the recycling practices at USD have been identified as seven unique groups, including: Facilities Management, Student Services, Missouri Valley Recycling Center, Student Government Association (SGA), the sustainability program at USD, the Sustainability Club, and campus patrons. Each group's stake in the existing policy has been identified, in addition to delineating and assessing each stakeholder's impact, influence and interest in the recycling practices of USD. Further explanation follows Table 1, providing greater insight to how each stakeholder is perceived and was evaluated.

Table 1

Stakeholder	Stake in the Existing Policy	Impact/Influence/ Interest	What is required of them?	Perceived Attitude/Risks
Facilities Management	Administrative mandate, responsible for custodial services	Impact: High Influence: High Interest: High	Increased commitment of resources to recycling efforts	Restricted budget to commit to recycling efforts, more immediate priorities in maintaining facilities and infrastructure
Student Services	Implemented and practicing recycling policies in limited capacity	Impact: High / Medium Influence: Medium Interest: Medium/High	Increased coordination with Facilities Management	Incremental undertaking of custodial services may lead to uncooperative sentiment with Facilities Management
Missouri Valley Recycling Center	Pick up and receive recycled materials from USD campus	Impact: Low Influence: Low Interest: Medium/High	Openness to working with USD and capability to receive higher volume of recyclable materials	If volume increases considerably it would require more labor and attention to collect and sort the recycled waste generated from USD

Student Government Association (SGA)	Liaison between student body and USD administration / SD Board of Regents	Impact: Medium/Low Influence: Medium/Low Interest: Medium/High	More sustainability-focused mindset that includes request for increased recycling opportunities on campus	Seemingly open to a conversation that endorses sustainability, actualizing this support more challenging however
Sustainability Program (Academic)	Currently no stake in the existing policy	Impact: Medium/Low Influence: Low Interest: High	Greater integration of coursework, especially in the research and internship level to draw upon student resources to support recycling efforts	Students' sustainability interest may differ from emphasis on recycling, making it more difficult to direct student work to include a recycling focus
Sustainability Club	Currently no stake in the existing policy	Impact: Medium/High Influence: Low Interest: High	Concentrated message to make recycling aspirations more attainable, assist in increasing awareness of recycling's importance	Fledgling organization with numerous interests may make actualizing recycling goals a long-term priority rather than short-term
Campus Patrons	Generators of solid waste recyclables, responsible for front-end disposal of waste	Impact: High Influence: Low Interest: Low	Seek out current opportunities to recycle and be vocal in requesting more locations to conveniently dispose of recyclable materials	Apathetic toward recycling solid waste underscored by limited opportunity to do so on campus, recyclable volume stymied by a culture unconscious of sustainable living practices

Facilities Management

Lead Contact: Bob Oehler, Vice President of Facilities Management

The Facilities Management Department at USD is responsible for providing numerous services on campus, including: custodial, grounds and landscaping, moving, occupational safety, operations and maintenance, telephone services, and utilities (Facilities Management. (n.d.). Of these functions, the provision of custodial services is especially critical to the level of stakeholder value Facilities Management holds in the current recycling strategy and any proposed policy alternatives. Currently, custodial services has the discretionary authority to redirect solid waste to the appropriate recycling stream three times a week through a curbside recycling agreement with the Missouri Valley Recycling Center in Vermillion, SD.

A larger function of Facilities Management includes the ability of administration to implement a vision for future recycling practices. Because of this authority, Facilities Management maintains both high influence and high impact capabilities.

Student Services

Lead Contact: Kim Grieve, Vice President of Student Services

Secondary Contact: Kyle Schoenfelder, MUC Director

Student Services at USD has assumed increased responsibility in providing recycling opportunities in university buildings, especially within the Munster University Center and Wellness Center. Both buildings are new to the USD campus, as they were each constructed in the last five years. Facilities Management has faced greater demand to provide custodial services to these building without adequate financial support for the additional square footage created. Consequentially, Student Services has supplemented the custodial staff provided by Facilities Management with their own workers (Ellenbecker, 2014 and Oehler, personal interview). In addition to this supplementation, each facility has also made available canisters to recycle plastic, paper, newspaper and unrecyclable waste.

In addition to the actions taken at the Munster University Center and Wellness Center, Student Services also oversees University Housing, where they have implemented recycling programs varying in extensiveness among residence halls including: Coyote Village, North Complex (Beede, Mickelson, Olson and Richardson Halls), Burgess and Norton Halls and McFadden Hall. Because a high level of solid waste is produced in these environments, and also because of the programs being implemented in the buildings Student Services operates (including the Munster University Center and Wellness Center), Student Services has assumed a stakeholder role of being high impact and medium influence. The influence role of Student Services is less than that of the Facilities Management due to the administrative mandate of each department.

Missouri Valley Recycling Center

The current structure of USD's recycling practices rely on the Missouri Valley Recycling Center to receive the recyclable materials collected on the USD campus through a three-time-a-week curbside recycling

agreement. The center currently accepts: plastic #1 and #2 cans, aluminum cans, newspaper, corrugated cardboard, cereal, beer, pop, shoeboxes and lightweight press board, computer and white paper, mixed office and pastel paper, shred office paper, magazines, catalogs and slicks, books and phone books, and scrap metals including clean aluminum, brass and copper. As one can infer, the amount of materials accepted greatly exceeds what is currently being collected by USD, signifying an opportunity to further reduce the volume of solid waste being transported to a landfill. Without having specific statistical data, the under-recycling that is occurring on the USD campus has resulted in a lower-volume of solid waste being taken to the recycling center. Policy alternatives that increase USD's capability of recycling waste will undoubtedly increase the amount of materials taken to the Missouri Valley Recycling Center to be processed. However, an alternative policy that relies on an outside contractor to collect the recyclable waste and haul it to an off-site location that is not the Missouri Valley Recycling Center will eliminate all of the campus recyclables the center currently receives. The resulting stakeholder position for the center is one of medium impact and low influence.

Student Body and Solid Waste Generators on Campus

Without a supply of recyclable solid waste there would be no need for a recycling policy to be implemented on campus. Given this apparent observation, the students, faculty and staff of the University of South Dakota have a direct stakeholder claim to the recycling policy, as it is their waste that produces the demand for a policy to exist. However, not all members of this group share the same level of impact and influence on the existing policy and proposed policy alternatives. Certain members of the student body, especially those in leadership positions (including the Student Government Association, SGA) exert greater influence in realizing new policies. Because SGA serves as the liaison between students, administration, faculty and the South Dakota Board of Regents, SGA is an inherent stakeholder in establishing a concentrated voice of student support for more recycling opportunities (Student Government Association. (n.d.). In addition to SGA, departments and student organizations also function as more involved stakeholders. Most prominent among the academic departments is the Arts and Sciences Department, specifically the Sustainability

Program. Led by Dr. Meghann Jarchow, the Sustainability Program offers a Bachelor of Arts and a Bachelor of Science in Sustainability, and also a Sustainability minor. Courses within this program are highly interdisciplinary, including classwork that incorporates the biology, anthropology, mass communication, political science, chemistry, earth science and sustainability fields.

Underscoring the Sustainability program's inherent interest of promoting sustainable practices at the campus level is the Sustainability Club, a student organization advised by Dr. Jarchow. Formed in 2013, the Sustainability Club's mission is: "To implement initiatives that enrich appreciation for sustainability within our community, demonstrating the link between environmental, economic and social issues" (Robertson (personal communication, April 26, 2014 and Dodson, 2013). The organization's foremost ambition to advance its mission is to increase recycling opportunities on the USD campus (Robertson personal interview, April 14, 2014). Due to the variability of this composite stakeholder group, the impact and influence levels have been delineated in the included stakeholder analysis table (See Table 1.1).

Exploring the Causes of the Problem

Before policy alternatives can be generated it is beneficial to explore certain causal stories that produce the under-recycling state USD currently finds itself. As previously noted, USD has undergone an incredible transformation in the recent decade. In addition to the rebranding and construction projects, USD has restructured its mission vision and values to reflect an increased focus on diversity and inclusiveness. Administrative strategy and behavior has reflected this focus, potentially to the detriment of other beneficial priorities embraced by other institutions. Principally among these other focuses is sustainability, including the practice of recycling. As the new-look USD continues to take form, it is doing so without a conscious administrative awareness of sustainable and environmentally mindful practices. Resulting effects include an indifferent and even uninterested campus population consisting of students, faculty and staff. The absence of an environmentally aware culture that exists at USD restricts behavior like recycling from occurring in greater capacities.

A second, and perhaps greater, causal factor in the current under-recycling practices of USD results from the lack of financial and human resource support for the Facilities Management Department. Despite having an Assistant Vice President of Facilities Management with proven sustainability experience at the University of California Berkeley, University of Wisconsin— Stevens Point and University of Wisconsin— Oshkosh, the efforts of the Facilities Management office are limited to reactionary duties. Inhibited by financial and labor constraints, USD Facilities Management is limited to a reactionary administration capable of maintaining existing facilities and the status quo. Without additional resources, a cost-neutral recycling solution, or increased involvement by other actors, the Facilities Management appears unable to undertake the burden of planning a recycling strategy, let alone operate a more extensive recycling effort with the existing staff (Oehler, personal interview, April 25, 2014).

Alternative Policy Goals

What policy best remedies the problem USD faces in enabling its campus patrons to divert more of their solid waste into the recycling stream? Identifying policy goals better positions an actor to evaluate the proposed alternatives and contrast those policies with the status quo. A primary policy goal should be an *increased availability of recycling opportunities* throughout the entire campus. Cited as a detrimental factor in the current recycling participation rate, an increased number of recycling canisters dispersed throughout the entire campus is a critical goal of proposed policy alternatives (See Nagy, 2014). Criteria for this policy goal consist of quantifying physical containers while also considering how many different materials can be recycled, i.e. paper, plastic containers, glass, etc. s

Provided the resources, an auxiliary goal of increasing the availability of recycling opportunities on campus is to *remove a higher percentage of recyclables form the campus solid waste stream*. To establish ideal analytical criterion for this goal, a baseline of recycled tonnage and percentage of recycled materials diverted from the current waste stream would need to be calculated. Proposed alternatives would then require an estimate of

recycled tonnage and the percentage of recycled materials removed from the solid waste stream, with both short and long-term projections.

Second, the current policy presents a fractured image of administrative responsibility for recycling initiatives being practiced. *Singular responsibility* should therefore be a goal of the policy alternatives, allowing for the involvement of multiple interested parties to contribute in various capacities. Creating a more standardized method of collecting recycled materials increases *accountability* while ensuring a higher likelihood of *universal recycling* throughout the entire campus.

A third goal and perhaps the most critical to justify the political feasibility of a proposed alternative is the *economic benefit* of instituting an expanded recycling program. From an administrative and academic standpoint, the recent decade has forced USD to become increasingly lean. With increasingly finite resources, ensuring the feasibility of a policy alternative requires the alternative to either be cost-neutral, or generate a high enough positive externality to justify implementation.

The fourth and final explicit goal addresses one of the causes for the current problem, the absence of an environmentally aware culture at USD. The proposed policy should foster a campus-wide mindset of practicing sustainable behavior, where the student population, faculty and staff are more environmentally conscious of their behavior. Criterion for this goal is less analytical than previous goals, but could be measured by the activity of the Student Government Association, the conversation being initiated by USD through their website, Student Services and programming and also in the University's marketing efforts.

Before proceeding to the policy alternatives, it should be noted the above goals are conflicting at times. The dual emphasis on containing costs and increasing the amount of solid waste redirected into the recycling stream operates as the crux of the problem USD is currently facing. There is almost a non-existent population that does not want to increase recycling efforts on campus, yet achieving higher recycling rates has been undercut by the availability of funding available for a more comprehensive program. Therefore, finding the most socially desirable policy that maximizes utility will require weighing the criteria and accepting inherent tradeoffs.

Policy Alternatives

Alternative 1: Recycling Trailers are Dispersed Throughout Campus + Indoor Recycling Canisters are Increased in all buildings

The Missouri Valley Recycling Center currently provides recycling trailers at four Vermillion locations capable of receiving #1 and #2 plastics, tin cans, aluminum cans, newspaper, computer and white paper, magazines, catalogs and slicks. The cost per trailer is estimated between $3,000 and $5,000 (Missouri Valley Recycling Center, n.d.). USD would be responsible for providing these trailers and maintaining them, however, the opportunity to rely on the Missouri Valley Recycling Center or waste contractor to empty the trailers is also a possibility. Facilities management, in coordination with Student Services would then provide tubs or receptacles that can be filled in residence halls, classroom buildings and administrative buildings. The emptying of these receptacles would be the primary responsibility of custodial staff, allowing the option for students to recycle in their own residence hall solid waste as well as Student Services supplementing the recycling efforts by the custodial staff of Facilities Management.

Alternative 2: Rely on an Outside Contractor to Provide Single Stream Recycling Service

This alternative expands upon the existing solid waste contract between Independence Waste and USD, or given a comprehensive cost-benefit analysis is undertaken, seeks a new contract with a separate solid waste collector such as Waste Management Systems or Millennium Recycling. Rather than relying on the multi stream service provided by the Missouri Valley Recycling Center, USD would bid out recycling services to an outside contractor. This contractor would provide industrial receptacles to increase recycling opportunities on campus in which smaller recycling containers could be emptied into. Additionally, single stream recycling contractors accept more materials than the Missouri Valley Recycling Center, allowing for the additional recycling of: Plastic Containers #1-#7, cardboard*, glass bottles, paper and plastic bags.

*The Missouri Valley Recycling Center does accept cardboard at the facility but the current trailers located throughout Vermillion do not

Alternative 3: Incoming Student Sustainability Orientation and New Faculty/Administrator Onboarding Practices

Assuming the current recycling practices remain unchanged, this policy would incorporate sustainability instruction to incoming students and in the onboarding process for newly- hired faculty and administrative staff.

Information provided includes information and advice on how to live an environmentally responsible lifestyle while on USD's campus, emphasizing the reduction of waste in all varieties. Further, all current available campus and community recycling opportunities will be identified to individuals so they are fully aware of what can be recycled and where recycling locations are.

This policy is supplemented by a dedicated webpage on the USD website that provides a static source of information offering site visitors increased opportunity to live sustainably on the USD campus and within the Vermillion community. Additionally the website will demonstrate and identify the current environmental practices of USD to foster institutional support for sustainability.

Alternative 4: Upstream Effort to Reduce Need to Recycle Solid Waste

USD's current recycling practices consist primarily of the recycling of plastic beverage bottles and paper coffee containers. Implementing a campus-wide waste-reduction awareness campaign could greatly reduce these items from becoming waste to begin with. Employing an upstream approach, this policy would substitute disposable containers for reusable plastic containers. Existing and all incoming on-campus students and staff would be provided a plastic hot/cool beverage container. Further, incentives would be implemented to encourage use of these containers, including the reduction of price at all campus-dining locations if the plastic container is used. In addition, a scheduled update to existing water fountains would provide an easy, top-fill system of filtered drinking water to encourage reusable container use throughout the entire campus.

Policy Evaluation

Given the time constraints of this policy analysis, it is not feasible to provide an exhaustive review of the four proposed alternatives. However, assessing each of the policy alternatives in relation to specific goals can help differentiate what each policy alternative is capable of producing in terms of advancing the existing recycling practices at USD. Assessing each alternative thoroughly requires considering how the proposed policy affects: the availability of recycling opportunities, the level of recyclable materials diverted from the solid waste stream, the reduction of recyclable waste from the solid waste stream, the concentration of responsibility in implementing the new policy (clarity of oversight and implementation feasibility), the cost/economic feasibility, and the contribution to the sustainable culture at USD. Table 2 presents a matrix that provides such an analysis, offering a brief overview of how each alternative compares with the current recycling practices.

Table 2

Policy	Availability of Recycling Opportunities	Level of Recyclable Materials Diverted from Solid Waste Stream	Reduction of Recyclable Waste from the Solid Waste Stream	Concentrated Responsibility of Policy Implementation	Cost / Economic Feasibility	Contribution to Sustainable Culture at USD
Status Quo	Low opportunity to recycle materials, inconsistent opportunity throughout campus	No increase	No reduction	Multiple offices responsible for maintaining status quo	Cost: low Existing funds remain constant to ensure status quo	No increased contribution to sustainability culture at USD
Alternative 1 Recycling Trailers	Increases recycling opportunities, restricted by material types able to be recycled	High increase of materials diverted from solid waste stream, restricted by multi-stream system	No reduction of recyclable material as a direct result of the policy alternative	Increased concentration of responsibility to the Facilities Management with substantial opportunity for other stakeholder involvement	Cost: High High upfront fixed costs with medium-low operating expenses	Medium-low as the result of trailers creating greater awareness

Alternative 2 Outside Contractor	Greatly increased, highly dependent on scope of the contract	Very high, single stream system enables higher participation	No substantial reduction of recyclable material as a direct result of policy alternative	Highly concentrated responsibility as Facilities Management would oversee almost entire operation	Cost: High Potential to lessen cost by bailing cardboard to sell to offset collection cost	Medium as the result of comprehensiveness of the program and visibility of more recycling containers
Alternative 3 Orientation	Unchanged assuming policy is adopted by itself	Medium increase, dependent on effectiveness of orientation programming	Medium increase, contingent on effectiveness of reduction message in orientation programming	Varies, Moderately concentrated depending on implementation method	Cost: Low Labor and logistical costs, potentially offset by involvement of student and department involvement	High, establishes baseline conversation for sustainability on campus and demonstrates institution support for environmentally responsible behavior
Alternative 4 Upstream Waste Reduction	Unchanged assuming policy is adopted by itself	No increase	Medium reduction depending on use of alternative containers	Highly concentrated as Student Services could implement Alternative 4 solely	Cost: Low High degree of flexibility in funding sources	Medium Conversation emerges through the continued implementation of policy alternative

Plan for More Detailed Policy Evaluation

Status Quo

Evaluating the status quo with the policy goals in mind requires using analytical criteria that measures the current level of solid waste being removed from USD and also the amount of recyclable materials that are being taken to the Missouri Valley Recycling center. In addition, a calculation of labor costs should also be made to quantify the amount of labor hours spent collecting recyclables, sorting recyclables and delivering those items to the recycling center.

In addition to the time, labor, and volume analyses, qualitative surveys would also complement an effective evaluation of the status quo, engaging waste generators to provide feedback regarding the recycling opportunities offered on the USD campus.

A comprehensive policy evaluation of the status quo serves not only as a way to evaluate the current practice, but it is also essential in contrasting what is currently being practiced with the proposed policy alternatives.

Alternative 1: Recycling Trailers

Evaluating Alternative 1 requires figuring all costs involved with the proposed purchase of recycling trailers and positioning them on campus, the labor cost of emptying/sorting the trailers and the additional costs incurred from purchasing more recycle canisters to disperse throughout the entire campus. Additionally, an analytical study should be performed that estimates the volume of materials disposed of in the trailers by relying on the existing trailers placed throughout the Vermillion community as comparable examples. These figures could then be contrasted with the status quo baseline regarding the volume of solid waste recycled and this number as a percentage of the total solid waste stream.

Developing an evaluative understanding of how this policy affects the sustainably culture at USD would require a qualitative analysis among a randomized sampling of students, faculty and staff that produces or refutes a correlation between recycling trailers/increased recycling opportunity and an emboldened campus culture of sustainability.

Alternative 2: Outside Contractor

Alternative 2, the anticipated costliest policy alternative yet the most effective at providing students, faculty and staff an increased opportunity to recycle, requires an extensive cost benefit analysis with the inclusion of policy variables such as revenue producing practices including baling cardboard and reselling recycled paper. Comparable figures could be used provided by external contractors and universities of similar size that contract out the collection of solid recyclable waste (such as South Dakota State University). Using this data, USD could have a better understanding of how much solid waste could be recycled and removed from the waste stream in addition to having greater insight as to how a comprehensive single-stream recycling policy leads to a reduction of all solid waste.

Alternative 3: Orientation

The orientation alternative, relative to the previous alternatives, is more difficult to evaluate because of its qualitative design. Perhaps the most effective method of evaluating this alternative is to calculate the amount of waste and recyclable waste the average person generates. Following this calculation, a

quantitative survey could be conducted that explains how an orientation program would affect this rate of waste generation, whether by a weight amount or percentage of waste. This figure could be extrapolated to include the entire campus, enabling evaluators to utilize criteria to measure the extent of goal achievability.

Alternative 4: Upstream Waste Reduction

Alternative 4 requires a calculation of costs for providing a hot/cold beverage container to faculty, staff and on-campus students to establish financial feasibility. Additionally, understanding how committed recipients of this container are to using it instead of traditional disposable containers is also critical to predict the impact this policy has in reducing waste upstream. An additional factor to consider is the political feasibility of Alternative 4, as it involves Student Services taking a more active role in dictating operating practices of contracted food providers including Aramark and franchises such as Einstein Brothers, Chik-Fil-A and Qdoba.

After the details of the policy were solidified, including the provision of incentives to use the reusable containers, a more accurate figure could be produced that indicates Alternative 4's effectiveness in achieving the policy goal of reducing recyclable waste.

Policy Recommendation

Before a policy recommendation is made, it is important to understand the proposed policy alternatives are not the only available solutions for addressing the problem of under-recycling on the USD campus. In addition, the alternatives could be representative of a foundational policy that can be expanded on as resources and interest increase. Further, the policy alternatives are not entirely mutually exclusive. Based on the preliminary evaluation, a combination of policy alternatives would best situate the university to increase recycling opportunities while also meeting the criteria outlined. *Note, the recommendation being made has not been thoroughly researched and placed through an evaluative process to offer a solution founded on exhaustive research*. Given these disclaimers, there does appear to be an apparent best-policy solution within the alternatives to remedy the problem of under-recycling.

Considering the goals of an alternative policy, USD could benefit most from an adoption of policy alternatives 3 (orientation) and 4 (upstream waste reduction) to accentuate either policy 1 (trailers) or policy 2 (outside contractor). Alternatives 3 and 4 alone are not strong enough to achieve the goal of increasing recycling opportunities throughout the USD campus, but are critical in accomplishing the other goals that were detailed. Additionally, the low-cost and high impact potential of policies 3 and 4 make the two alternatives highly attractive.

Alternatives 3 and 4 would accompany either Policy Alternative 1, the introduction of trailers to be emptied locally or Policy Alternative 2, increasing the contract of solid waste to include the collection of single-stream recyclables. These two policies are mutually exclusive of each other as they both seek to accomplish the identical goal of increasing recycling opportunity. Unfortunately, due to resource and time constraints, this policy analysis is unable to recommend one policy over the other without first analyzing each policy and performing a cost-benefit analysis. Ultimately however, one of the two alternatives should be chosen and then supplemented by Alternative 3 and Alternative 4. The resulting recycling program at USD would place the recyclable collection oversight solely on Facilities Management while relying on Student Services to foster a culture of sustainability and establish a call to recycle through the implementation of Alternatives 3 and 4.

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